

WHAT IS CLAIMED IS:

1. A method of assembling a gas turbine engine, said method comprising:

providing a plurality of stator vane sectors that each include an equal number of stator vanes that are circumferentially-spaced such that a first circumferential spacing is defined between each pair of adjacent stator vanes within the sector; and

coupling the plurality of stator vane sectors together to form a stator vane assembly such that a second circumferential spacing is defined between each pair of adjacent stator vanes coupled to adjacent sectors, wherein the second circumferential spacing is different from the first circumferential spacing.

2. A method in accordance with Claim 1 wherein coupling the plurality of stator vane sectors together to form a stator vane assembly further comprises coupling at least four stator vane sectors together to form a circumferential assembly.

3. A method in accordance with Claim 1 wherein coupling the plurality of stator vane sectors together to form a stator vane assembly further comprises coupling the plurality of stator vane sectors together such that the second circumferential spacing is greater than the first circumferential spacing.

4. A method in accordance with Claim 1 wherein coupling the plurality of stator vane sectors together to form a stator vane assembly further comprises coupling the plurality of stator vane sectors together such that the second circumferential spacing is about one hundred fifty percent of the first circumferential spacing.

5. A stator vane assembly for a gas turbine engine, said stator vane assembly comprising a plurality of stator vane sectors, each of said plurality of stator vane sectors comprising an equal number of circumferentially-spaced stator vanes

oriented such that a first circumferential spacing is defined between each pair of adjacent stator vanes within each said sector, said plurality of stator vane sectors coupled together such that a second circumferential spacing is defined between each pair of adjacent stator vanes coupled to adjacent sectors, said second circumferential spacing is different from said first circumferential spacing.

6. A stator vane assembly in accordance with Claim 5 wherein each of said plurality of stator vane sectors further comprises a first end and an opposite second end, each of said first and second ends comprising an end stator vane, adjacent stator vane sectors coupled together such that adjacent end stator vanes coupled to respective stator vane sectors are separated by said second circumferential spacing.

7. A stator vane assembly in accordance with Claim 5 wherein said plurality of stator vane sectors are coupled together to form a circumferential assembly.

8. A stator vane assembly in accordance with Claim 5 wherein each of said stator vane sectors defines a portion of a flow path extending through the engine.

9. A stator vane assembly in accordance with Claim 5 wherein said plurality of stator vane sectors comprise at least four stator vane sectors.

10. A stator vane assembly in accordance with Claim 5 wherein said second circumferential spacing is greater than said first circumferential spacing.

11. A stator vane assembly in accordance with Claim 5 wherein said second circumferential spacing is about one hundred fifty percent of said first circumferential spacing.

12. A stator vane assembly in accordance with Claim 8 wherein said rotor disk comprises a plurality of circumferentially-spaced rotor blades, said second circumferential spacing facilitates reducing a vibration response induced to said plurality of rotor blades.

13. A stator vane assembly in accordance with Claim 8 wherein said rotor disk comprises a plurality of circumferentially-spaced rotor blades, said second circumferential spacing facilitates inducing a phase shift in a vane wake to facilitate reducing said vibration response of said plurality of rotor blades.

14. A gas turbine engine comprising:

a compressor, said compressor defining an annular flow path, said compressor comprising:

a rotor disk positioned in said flow path, said rotor disk comprising a plurality of circumferentially-spaced rotor blades; and

a stator vane assembly positioned in said flow path downstream of said rotor disk, said stator vane assembly comprising a plurality of stator vane sectors, each of said plurality of stator vane sectors comprising an equal number of circumferentially-spaced stator vanes oriented such that a first circumferential spacing is defined between each pair of adjacent stator vanes within each said sector, said plurality of stator vane sectors coupled together such that a second circumferential spacing is defined between each pair of adjacent stator vanes coupled to adjacent sectors, said second circumferential spacing is different from said first circumferential spacing.

15. A gas turbine engine in accordance with Claim 14 wherein each of said plurality of stator vane sectors further comprises a first end and an opposite second end, each of said first and second ends comprising an end stator vane, adjacent stator vane sectors coupled together such that adjacent end stator vanes coupled to respective stator vane sectors are separated by said second circumferential spacing.

16. A gas turbine engine in accordance with Claim 14 wherein said plurality of stator vane sectors comprise at least four stator vane sectors.

17. A gas turbine engine in accordance with Claim 14 wherein said second circumferential spacing is greater than said first circumferential spacing.

18. A gas turbine engine in accordance with Claim 14 wherein said second circumferential spacing is about one hundred fifty percent of said first circumferential spacing.

19. A gas turbine engine in accordance with Claim 14 wherein said second circumferential spacing facilitates reducing a vibration response induced to said plurality of rotor blades.

20. A gas turbine engine in accordance with Claim 14 wherein said second circumferential spacing facilitates inducing a phase shift in a vane wake to facilitate reducing said vibration response of said plurality of rotor blades.